REMARKS

Claims 1-18 have been canceled so that claims 19-40 remain in the application. Claims 32-40 have been allowed.

Claims 19-29 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-44 of U. S. Patent No. 6,425,989 in view of Hiramoto, Katsuragawa and Sano. In regard to the double patenting rejection over claims 1-44 of U. S. Patent No. 6,425,989 the Applicant submits herewith a "Terminal Disclaimer To Obviate A Double Patenting Rejection Over A Prior Patent". It is believed that the Examiner intended to reject claims 19-31 instead of claims 19-29.

In support of his rejection of the claims the Examiner states:

> " . . When the discharge gas pressure, the discharge power, the temperature of the substrate, ***the bias state of the substrate,*** the magnetic field value above the target or in the vicinity of the substrate, the shape of the target or the direction in which the particles are incident to ***the substrate is changed***, not only the structure of the magnetic thin film of the present invention, but also the apparent coefficient of thermal expansion, ***the magnetic characteristics of the film or the like can be controlled (Compare to controlling the bias to be zero). (Column 8 lines 45-68)***"

The fact that Hiramoto states that the bias state of the substrate is a consideration can be controlled and is a consideration concerning the magnetic characteristics of the film does not teach that the substrate bias can be zero as set forth in claim 20. As can be seen from Chart B on page 15 of the specification superior results were obtained for the uniaxial anisotropy H_K when no substrate bias was applied. The Applicant maintains that a broad statement that the bias state of the substrate is important to achieve certain magnetic characteristics of the film does not anticipate a specific substrate bias, namely no substrate bias which provides superior results.

Further in support of his rejection the Examiner states:

> "***Furthermore, when it is necessary further to raise the magnetic anisotropy of the magnetic thin film of the present invention, a heat treatment in the magnetic field*** or formation of a film in the magnetic field ***can be preformed*** as well. (Column 9 lines 5-9)"

While Hiramoto refers to a heat treatment of 480°C in column 9, line 59 of his patent this is not a teaching of the hard axis annealing at about 232°C as set forth in claim 29.

Further in support of his rejection the Examiner states:

> "As to the amount of nitrous oxide it is believed that since Hiramoto et al. teach the required amount of nitrogen and oxygen to be utilized that the amount of nitrous oxide could be determined based on the required amounts of nitrogen and oxygen taught by Hiramoto et al. (See Hiramoto et al. discussed above)"

Hiramoto does not teach the introduction of nitrous oxide (N_2O) nor does he provide any percentages therefor as set forth in claims 21 and 22.

The process conditions necessary in order to obtain the high values of the uniaxial anisotropy H_K after hard axis annealing is discussed on page 5, lines 3-14 wherein it is stated:

> "I have found that doping NiFeCo with N_2O or N_2 greatly increases H_K after hard axis annealing and that when laminated with, for example, alumina or silica, thick structures can be sputter deposited with excellent in-plane anisotropy. Approximately 1.8 μm thick films were sputter deposited on Al_2O_3-TiC ceramic substrates with lapped undercoat alumina from a target with composition $Ni_{73.2}Fe_{18.1}Co_{8.7}$ (wt%) in a Balzers Z660 sputtering system using DC magnetron at a power of 1750 W, gas pressure of 2.0×10^{-3} mbar, and no substrate bias. The gas was a mixture of Ar and either N_2O or N_2. After deposition, the films were annealed three times on the hard axis at 232°C for 400 min in a magnetic field of approximately 1500 Oe. A typical film after annealing had an H_k of 10.8 Oe with in-plane anisotropy."

Should the Examiner have any questions regarding this document he is respectfully requested to contact the undersigned.

Respectfully submitted,

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